

Plaintiffs' Demonstratives Motions to Dismiss Under § 101

United States Patent Nos. 6,519,581; 6,510,434; and 6,546,002

Intellectual Ventures v. Erie Family Life Ins. Co. et. al.,
Civ. No. 1:14-CV-220-MRH

Procedural Framework

- Rule 12(b)(6) motion only granted if Complaint fails to state a plausible claim for relief
- Defendants bear burden of proof on § 101
- Each claim is presumed valid under § 282
- Patent-eligibility analysis can contain underlying factual issues

Procedural Framework

“Although the Court recognizes that, under certain circumstances, a determination of patent validity under section 101 may be made at the pleading stage on a motion to dismiss, *the issue of patentable subject matter requires a legal analysis that can—and often does—‘contain underlying factual issues.’* [I]t seems a definitive ruling on eligibility before claim construction *is only warranted in narrow circumstances, making such a ruling the exception rather than the rule.* . . . While the claim language of some patents may be so clear that the court need only undertake a facial analysis to render it invalid at the pleading stage, *that will not be the norm* and is certainly not the case here.”

Certified Measurement, LLC v. CenterPoint Energy Houston, Elec. LLC,

2015 U.S. Dist. LEXIS 39831, at *4-5 (E.D. Tex. Mar. 30, 2015) (Federal Circuit citations omitted)

Substantive Framework

- **Alice Step 1**: Are the claims at issue directed to an abstract idea?
- **Alice Step 2**: If so, are the claim limitations insufficient such that the claim in practice does not amount to significantly more than a patent upon the abstract idea itself?
- Courts tread carefully in applying the exclusion
- The *Bilski* machine-or-transformation test is an important and useful clue


The '581 Patent

Alice Step 1: Abstract Idea

Is the Patent Directed to an Abstract Idea?

Abstract

Not Abstract

- 
- Methods of Conducting Business
 - Managing Financial and Legal Relationships
 - Mathematical Equations
 - Ideas Upon Themselves

- Specific Machines
- Improvements to Existing Technological Processes
- Solutions Necessarily Rooted in Computer Technology to Overcome a Technological Problem

The Patent is Directed to Computer Technology



US006519581B1

(12) **United States Patent**
Hofmann et al.

(54) **COLLECTION OF INFORMATION REGARDING A DEVICE OR A USER OF A DEVICE ACROSS A COMMUNICATION LINK**

(75) Inventors: Wil
(US
CA

(73) Assignee: Als

(*) Notice: Sub
patent
U.S.C. 1340) by 0 days.

(54) COLLECTION OF INFORMATION REGARDING A DEVICE OR A USER OF A DEVICE ACROSS A COMMUNICATION LINK

Rosser et al. "Discovery of fraud rules to telecommunication challenges and solutions" ACM KDD pp 409-413.*

(21) Appl. No.: 09/844,858

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SUMMARY OF THE INVENTION

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Embodiments of the present invention provide a system for passively and actively collecting information about a device, such as a computing device and/or the user of the device. The system uses one or more discovery agents to collect information about a device or its user. The discovery agents do not have intelligence to understand the collected

and Discovery rules compile in the
Discovery Engine

'581 Patent at (54), Col. 1:61-67

The Patent Solves a Computer Problem



US006519581B1

(12) **United States Patent**

Class. Patent No.

US 6,519,581 B1

BACKGROUND

(54)

DEVICE ACROSS A COMMUNICATION
LINK

Hu et al., "Discovery of decision rules in relational databases: a rough set approach", ACM CIKM pp 392-400.*

(75) Inventors: **William D. Hofmann**, Berkeley, CA
(US); **John C. Hurley**, Sanata, Clara

Adomavicius et al., "User profile in personalization appli-

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Existing procedures for collecting or retrieving information are typically contained in a software application or a built-in diagnostic routine that performs one or more procedures to monitor specific portions of a system. Generally, these procedures are included in a single application or a diagnostic routine that retrieves information about the system and analyzes the retrieved information. Therefore, these procedures retrieve a particular set of information and perform a particular analysis on the information.

Discovery engine identifies Discovery Agents
and Discovery Rules Coupled to the
Discovery Engine

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'581 Patent at Col. 1:25-33

The Patent Solves a Computer Problem



US006519581B1

(12) **United States Patent**
Hofmann et al.

(10) **Patent No.:** **US 6,519,581 B1**
(45) **Date of Patent:** **Feb. 11, 2003**

(54) **COLLECTION OF INFORMATION
REGARDING A DEVICE OR A USER OF A
DEVICE ACROSS A COMMUNICATION**

Hofmann et al, "Mobile agents on the digital battlefield",
ACM Autonomous agents, pp 219-225.*

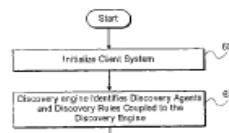
These existing applications or diagnostic routines are not easily modified if a user or administrator wants to change the information retrieved or change the analysis performed on the retrieved information. To make such a change requires modifying the application source code or modifying the built-in diagnostic routine, both of which can be complicated and time-consuming.

OTHER PUBLICATIONS

Elofson "intelligent agents extend knowledge base system feasibility", IBM system Journal vol. 34, No. 1, pp 78-95.*
Hilbert et al "Agents for collecting application usage data over the internet", ACM Autonomous agents, pp 149-156.*

the sender receives a user request, such as regarding the computer system, the discovery rule may be transmitted and the sender may use the resulting information to respond to the user request.

47 Claims, 6 Drawing Sheets



'581 Patent at Col. 1:34-41

The Patent Solves a Computer Problem



US006519581B1

(12) **United States Patent**
Hofmann et al.

(10) **Patent No.:** US 6,519,581 B1
(45) **Date of Patent:** Feb. 11, 2003

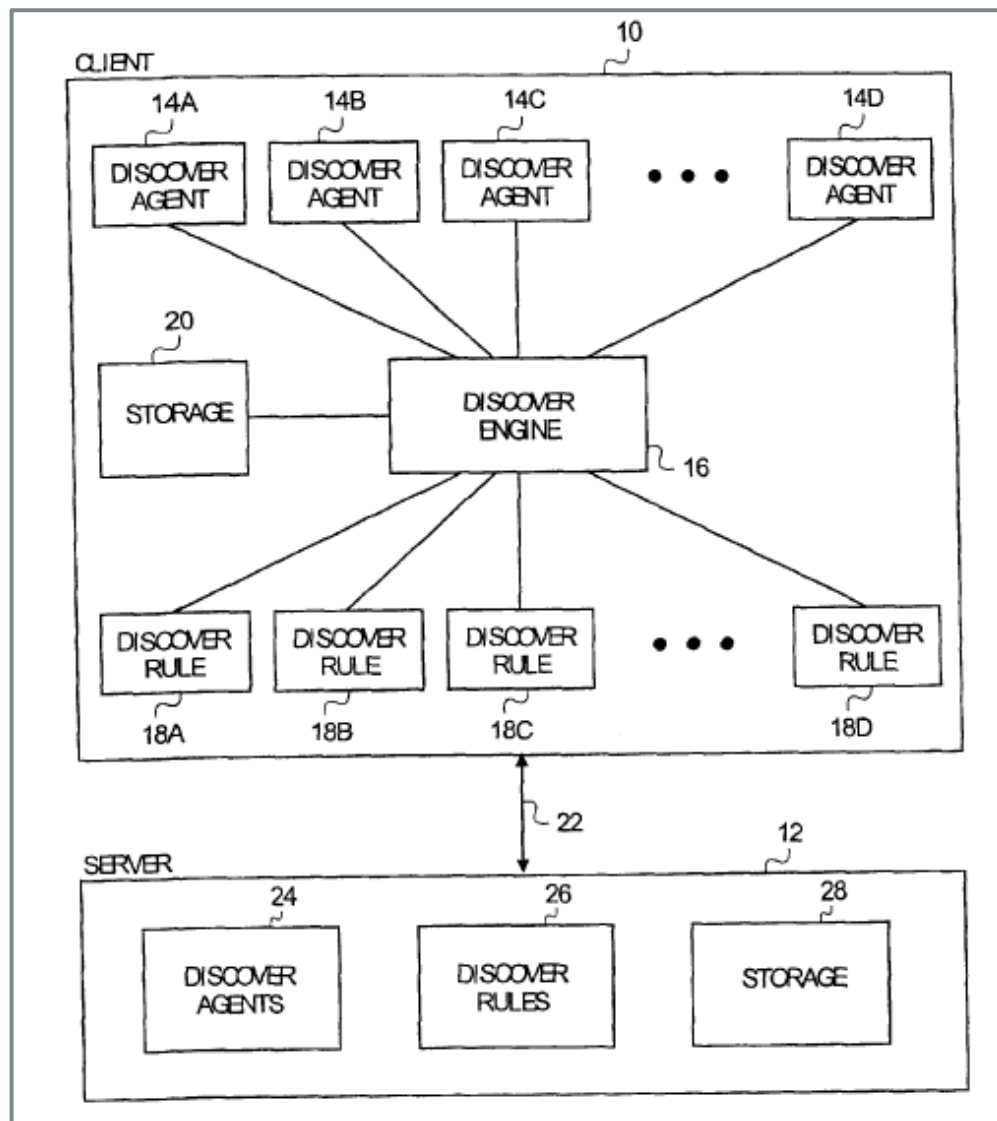
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Additionally, many existing applications are invoked and operated by a user of the system. Instead of running automatically or running in a "background" mode, these applications are executed at the direction of the user. Thus, to retrieve data about the system using this type of application, the user must install the application and know how to operate and command the application. If the application is used infrequently (e.g., only when a problem occurs), the user is not likely to be proficient when operating the application. In this situation, the user may need to re-learn the operation of the application before retrieving and analyzing data about the system.

Discovery engine identifies Discovery Agents
and Discovery Rules Coupled to the
Discovery Engine

'581 Patent at Col. 1:41-53

The Patent is Rooted in Computer Technology



'581 Patent at Fig. 1

The Patent is Rooted in Computer Technology



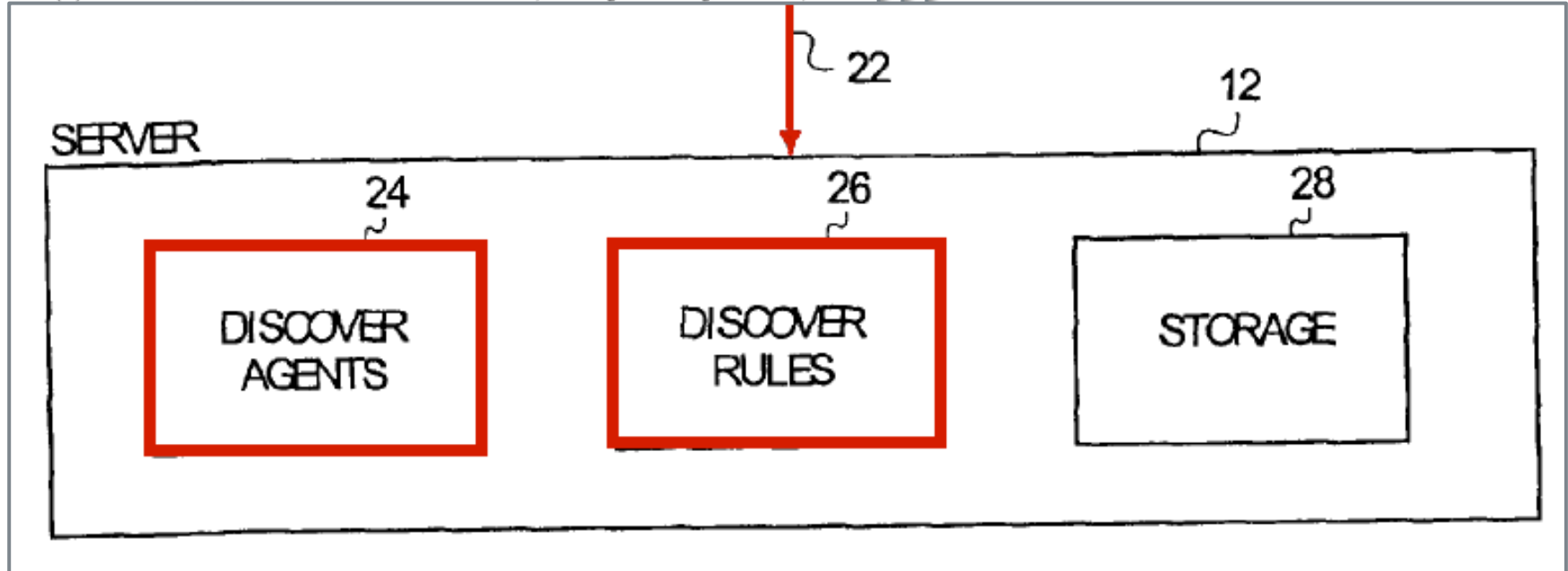
US006519581B1

(12) **United States Patent**
Hofmann et al.

(10) **Patent No.:** US 6,519,581 B1
(45) **Date of Patent:** Feb. 11, 2003

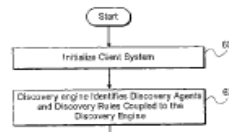
(54) **COLLECTION OF INFORMATION**

Hofmann et al, "Mobile agents on the digital battlefield",



Hilbert et al "Agents for collecting application usage data over the internet", ACM Autonomous agents, pp 149-156.*

47 Claims, 6 Drawing Sheets



'581 Patent at Fig. 1

The Patent is Rooted in Computer Technology

agent *n.* **1.** A program that performs a background task for a user and reports to the user when the task is done or some expected event has taken place. **2.** A program that searches through archives or other repositories of information on a topic specified by the user. Agents of this sort are used most often on the Internet and are generally dedicated to searching a single type of information repository, such as postings on Usenet groups. Spiders are a type of agent used on the Internet. *Also called:* intelligent agent. *See also* spider. **3.** In client/server applications, a process that mediates between the client and the server. **4.** In Simple Network Management Protocol (SNMP), a program that monitors network traffic. *See also* SNMP.

Microsoft Computer Dictionary, Fifth Edition

The Patent is Rooted in Computer Technology

(12) **United States**
Hofmann et al.

(54) **COLLECTION OF INFORMATION REGARDING A DEVICE OR DEVICE ACROSS A COMMUNICATION LINK**

(75) Inventors: **William D. Hofmann** (US); **John C. Hofmann** (US)

(73) Assignee: **Alset, Inc.**, Palo Alto, CA

(*) Notice: Subject to any disclaimer, this patent is extended under U.S.C. 154(b) by

(21) Appl. No.: **09/844,858**

(22) Filed: **Apr. 27, 2001**

Related U.S. Applications

(63) Continuation of application No. 09/844,858, filed Apr. 27, 2001, now Pat. No. 6,236,983.

(51) Int. Cl.⁷

(52) U.S. Cl.

(58) Field of Search

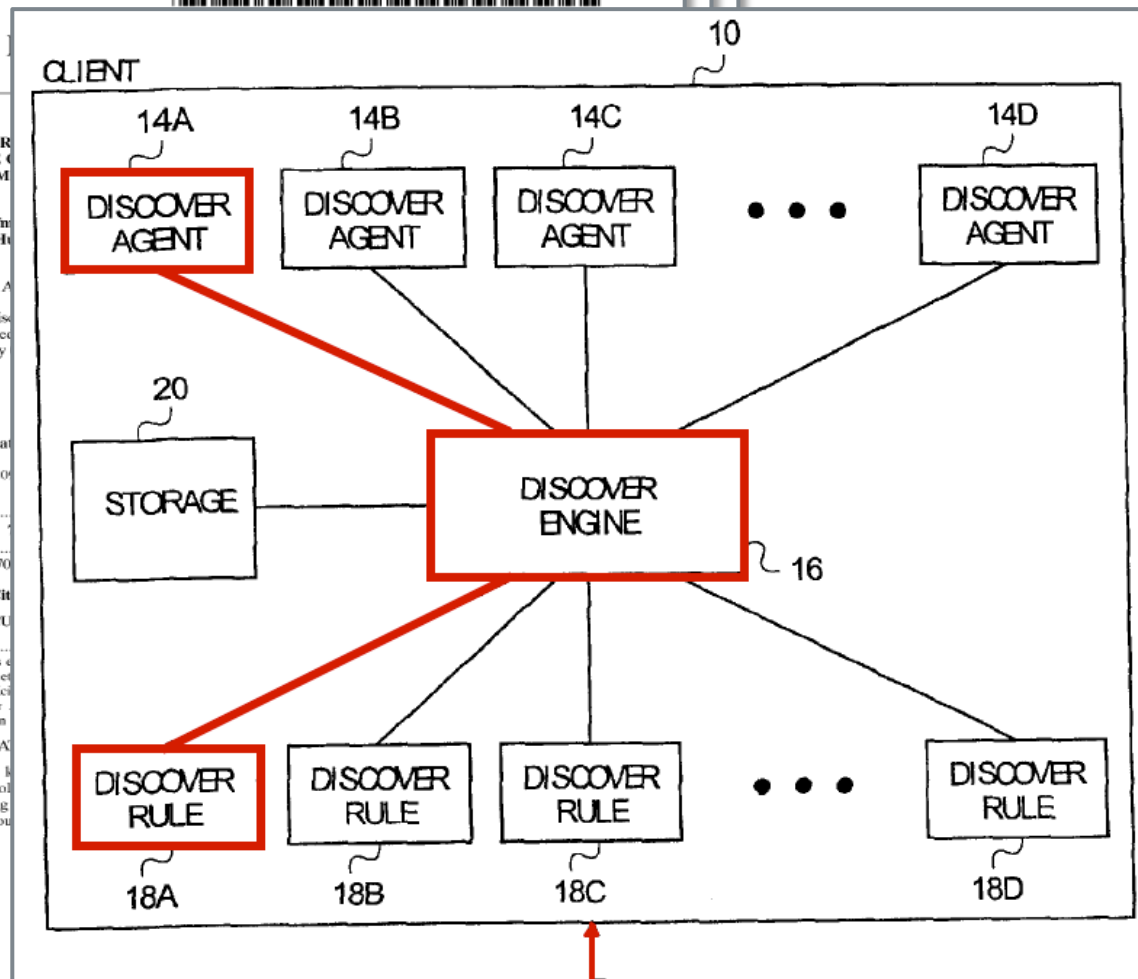
(56) **References Cited**

U.S. PATENT DOCUMENTS

5,185,860 A * 2/1993 Wu
5,555,346 A * 9/1996 Gross et al.
5,586,025 A * 12/1996 Tsuji et al.
5,727,174 A * 3/1998 Aparicio
5,877,259 A * 3/1999 Bauer
5,944,783 A * 8/1999 Nietem

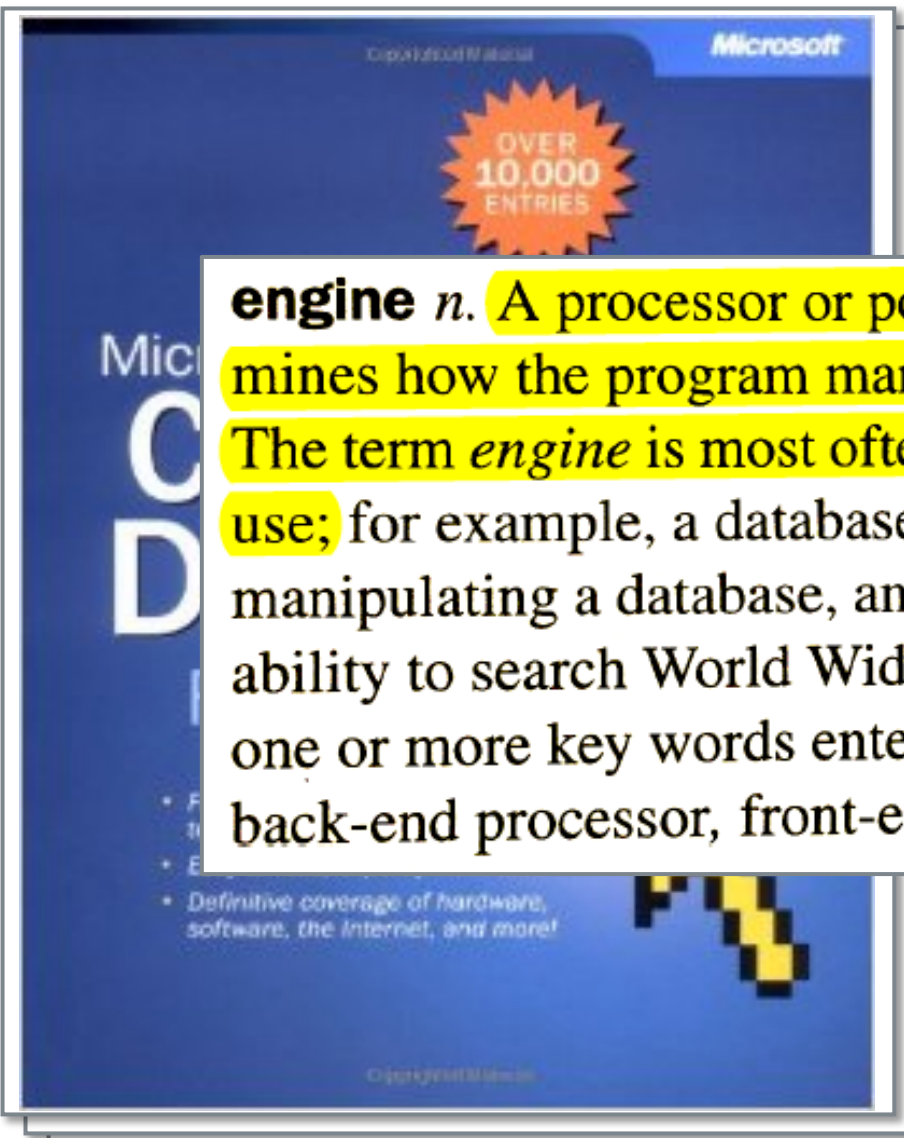
OTHER PUBLICATIONS

Elofson "intelligent agents extend the feasibility", IBM system Journal vol. 35, no. 4, 1990.
Hilbert et al "Agents for collecting information over the internet", ACM Autonomous



'581 Patent at Fig. 1

The Patent is Rooted in Computer Technology

The image shows the front cover of the Microsoft Computer Dictionary, Fifth Edition. The cover is blue with white and yellow text. At the top, it says 'Copyrighted Material' and 'Microsoft'. A large orange starburst graphic in the upper center contains the text 'OVER 10,000 ENTRIES'. The title 'Microsoft Computer Dictionary' is partially visible on the left side. A list of features is on the bottom left, and a pixelated graphic is on the bottom right.

engine *n.* A processor or portion of a program that determines how the program manages and manipulates data.

The term *engine* is most often used in relation to a specific use; for example, a database engine contains the tools for manipulating a database, and a Web search engine has the ability to search World Wide Web indexes for matches to one or more key words entered by the user. *Compare* back-end processor, front-end processor.

Microsoft Computer Dictionary, Fifth Edition

The Patent is Rooted in Computer Technology

(12) **United States**
Hofmann et al.

(54) **COLLECTION OF INFORMATION REGARDING A DEVICE OR DEVICE ACROSS A COMMUNICATION LINK**

(75) Inventors: **William D. Hofmann** (US); **John C. Hofmann** (US)

(73) Assignee: **Alset, Inc.**, Palo Alto, CA

(*) Notice: Subject to any disclaimer, this patent is extended under U.S.C. 154(b) by

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(51) Int. Cl. 7

(52) U.S. Cl.

(58) Field of Search

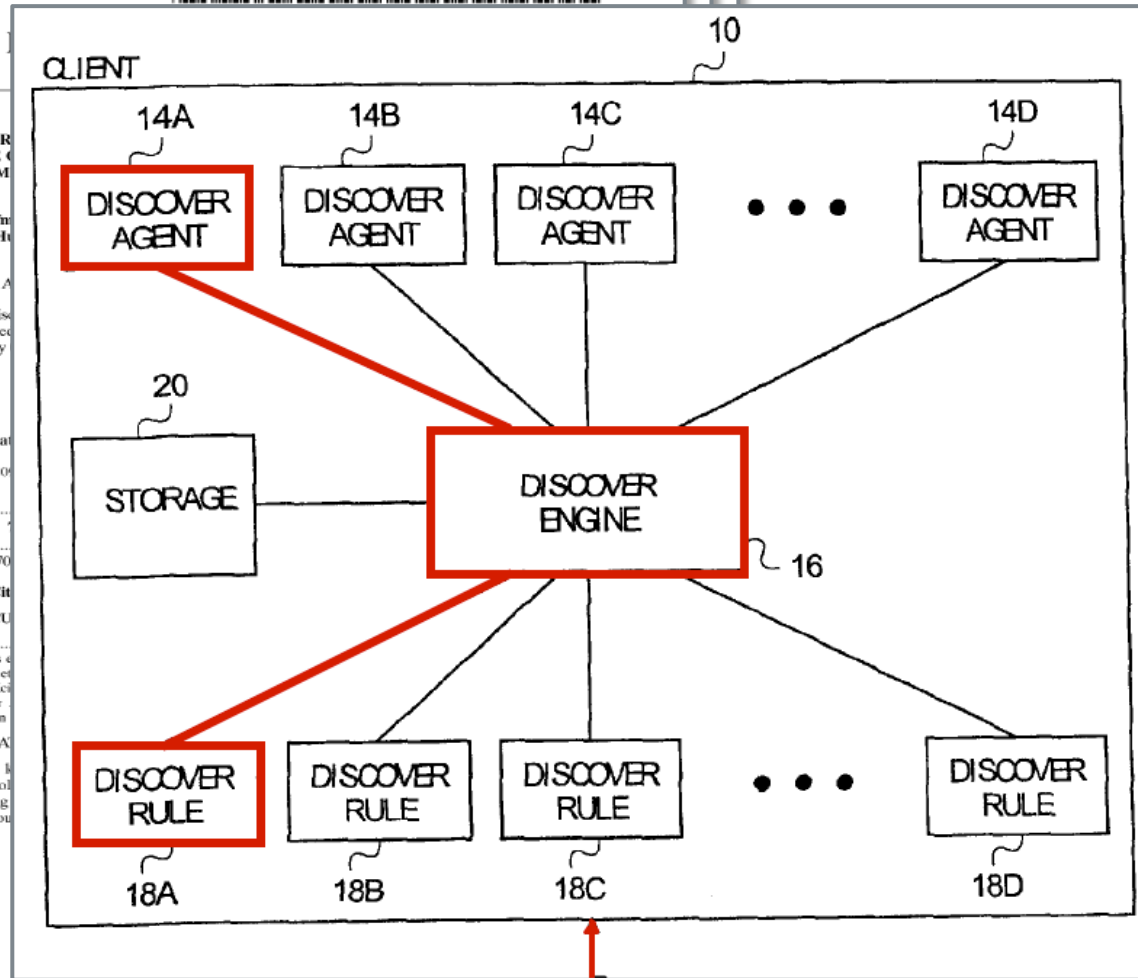
(56) **References Cited**

U.S. PATENT DOCUMENTS

5,185,860 A * 2/1993 Wu
5,555,346 A * 9/1996 Gross et al.
5,586,025 A * 12/1996 Tsuji et al.
5,727,174 A * 3/1998 Aparicio
5,877,759 A * 3/1999 Bauer
5,944,783 A * 8/1999 Nietem

OTHER PUBLICATIONS

Elofson "intelligent agents extend the feasibility", IBM system Journal vol. 35, no. 1, 1990.
Hilbert et al "Agents for collecting information over the internet", ACM Autonomous



'581 Patent at Fig. 1

The Patent is Rooted in Computer Technology



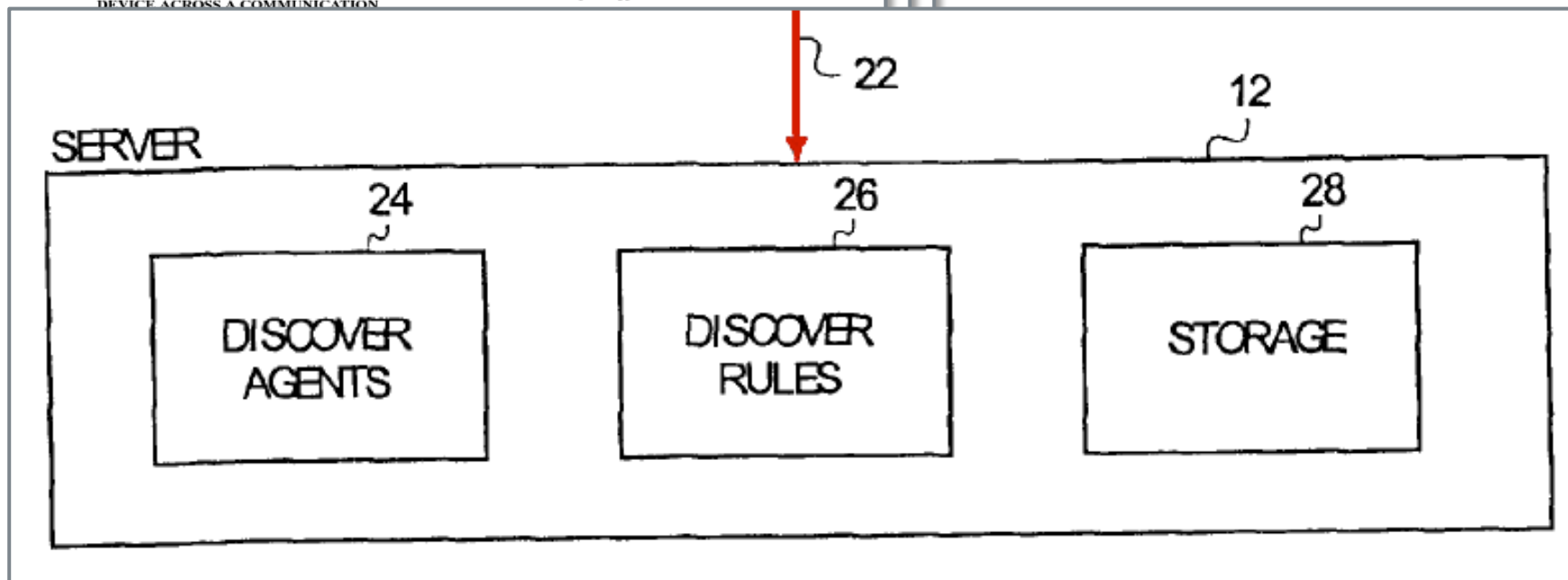
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(12) **United States Patent**
Hofmann et al.

(10) **Patent No.:** US 6,519,581 B1
(45) **Date of Patent:** Feb. 11, 2003

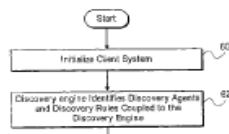
(54) **COLLECTION OF INFORMATION
REGARDING A DEVICE OR A USER OF A
DEVICE ACROSS A COMMUNICATION**

Hofmann et al, "Mobile agents on the digital battlefield",
ACM Autonomous agents, pp 219-225.*



over the internet", ACM Autonomous agents, pp 149-150.*

47 Claims, 6 Drawing Sheets



'581 Patent at Fig. 1

The Patent is Rooted in Computer Technology



US006519581B1

(12) United States Patent

(40) Patent No. US 6,510,581 B1

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Discovery Agent Name	Data Collected by Discovery Agent	Invoke Interval
HWConfiguration	ProcessorMfr, ProcessorModel, ProcessorSpeed, RAMSize, ConnectedDevices	5 min.
DiskDriveInfo	DiskCapacity, DiskRemovable, UnusedDiskSpace	1 min.
MemoryInfo	UnusedRAM, CacheUsage, LargestContiguousBlock	5 sec.
SWConfiguration	OperatingSystem, OpSysVersion, SoftwareList	5 min.
ActiveWindows	OpenWindows, FrontTitle, FrontPosition, FrontSize, FrontType	10 sec.
PersonallInfo	Hobbies, VacationPreference, Occupation, Gender	5 sec.

and Discovery Rules Copied to the
Discovery Engine

'581 Patent at Fig. 3

The Patent is Rooted in Computer Technology



US006519581B1

(12) **United States Patent**
Hofmann et al.

(10) **Patent No.:** US 6,519,581 B1
(45) **Date of Patent:** Feb. 11, 2003

(54) **COLLECTION OF INFORMATION
REGARDING A DEVICE OR A USER OF A
DEVICE ACROSS A COMMUNICATION
LINK**

Hofmann et al, "Mobile agents on the digital battlefield",
ACM Autonomous agents, pp 219-225.*

Hu et al, "Discovery of decision rules in relational data-
bases: a rough set approach", ACM CIKM pp 392-400.*

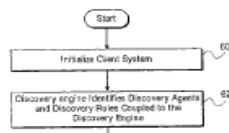
(75) **Inventors:** William D. Hofmann, Berkeley, CA

Discovery Rule Name	Data Required to Execute Discovery Rule
DiskDriveStatus	DiskCapacity, UnusedDiskSpace
System Status	UnusedDiskSpace, UnusedRAM, LargestContiguousBlock, OpenWindows
UpgradeWindow	OpenWindows, FrontTitle
GolfGamers	Hobbies, SoftwareList

Elofson "intelligent agents extend knowledge base system feasibility", IBM system Journal vol. 34, No. 1, pp 78-95.*
Hilbert et al "Agents for collecting application usage data over the internet", ACM Autonomous agents, pp 149-156.*

the sender may use the resulting information to respond to the user request.

47 Claims, 6 Drawing Sheets



'581 Patent at Fig. 4

The Patent is Rooted in Computer Technology



US006519581B1

(12) **United States Patent**
Hofmann et al.

(10) **Patent No.:** US 6,519,581 B1
(45) **Date of Patent:** Feb. 11, 2003

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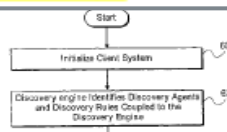
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Hilbert et al.
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11. In a computer system, method of collecting information comprising:

receiving a discovery rule across a communication link from a sender,

applying the discovery rule to data about the computer system or a user to generate information, and wherein the data is collected by a discovery agent located in the computer system when the discovery agent is activated and without requiring action by the user; and

communicating the information across the communication link back to the sender of the discovery rule.



'581 Patent at Claim 11

The Patent is Rooted in Computer Technology



US006519581B1

(12) **United States Patent**
Hofmann et al.

(10) **Patent No.:** US 6,519,581 B1
(45) **Date of Patent:** Feb. 11, 2003

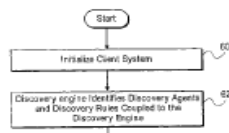
(54) **COLLECTION OF INFORMATION**
REGARDING A DEVICE OR A USER OF A

Hofmann et al, "Mobile agents on the digital battlefield",

(75) 1. A method of collecting information, the method comprising:
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(*)

(21) transmitting a discovery rule across a communication link
(22) to a computer system, wherein the discovery rule is to
(63) be applied to data about the computer system or a user
(51) to generate information, and wherein the data is collected
(52) by a discovery agent located in the computer
(58) system, and
(56) receiving the information from the computer system.

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'581 Patent at Claim 1

End of § 101 Inquiry

Alice Step 2

Even if Directed to an Abstract Idea, Does the Claim Contain Sufficient Limitations?

Sufficient Limitations on Abstract Idea

- A specific application of an abstract idea is patent-eligible
- Generic computing limitations are usually insufficient
- Overarching concern is preemption of every application of abstract idea

The Claims Cover a Specific Computer Application



US006519581B1

(12) **United States Patent**
Hofmann et al.

(10) **Patent No.:** US 6,519,581 B1
(45) **Date of Patent:** Feb. 11, 2003

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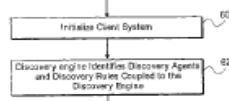
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Hilbert et al.
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11. In a computer system, method of collecting information comprising:

receiving a discovery rule across a communication link from a sender,

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communicating the information across the communication link back to the sender of the discovery rule.



'581 Patent at Claim 11

The Claims Cover a Specific Computer Application



US006519581B1

(12) **United States Patent**

Hofmann et al.

(10) **Patent No.:** **US 6,519,581 B1**(15) **Date of Patent:** **Feb. 11, 2003**

16. The method of claim 11, further including receiving the discovery agent across the communication link and the discovery agent and discovery rule are separate code sequences.

(21) Appl. No.: **09/844,858**(22) Filed: **Apr. 27, 2001**

* cited by examiner

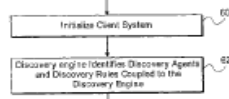
17. The method of claim 11, wherein the discovery agent is activated to collect the data when the discovery rule requires the data.

5,155,346 A * 9/1996 Gross et al. 706/45
 5,586,025 A * 12/1996 Tsuji et al. 707/50
 5,727,174 A * 3/1998 Aparicio et al. 345/348

agent and the discovery rule are separate code sequences or separate programs. The discovery rule is then applied to the information received from the discovery agent and the

19. The method of claim 11, wherein the discovery agent passively collects the data.

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'581 Patent at Claims 16, 17, and 19

The Patent Covers a Specific Computer Application

(12) **United States**
Hofmann et al.

(54) **COLLECTION OF INFORMATION REGARDING A DEVICE OR DEVICE ACROSS A COMMUNICATION LINK**

(75) Inventors: **William D. Hofmann** (US); **John C. Hofmann** (US)

(73) Assignee: **Alset, Inc.**, Palo Alto, CA

(*) Notice: Subject to any disclaimer, the patent is extended under 35 U.S.C. 154(b) by

(21) Appl. No.: **09/844,858**

(22) Filed: **Apr. 27, 2001**

Related U.S. Applications

(63) Continuation of application No. 09/844,858, filed Apr. 27, 2001, now Pat. No. 6,236,983.

(51) **Int. Cl.** ⁷

(52) **U.S. Cl.**

(58) **Field of Search**

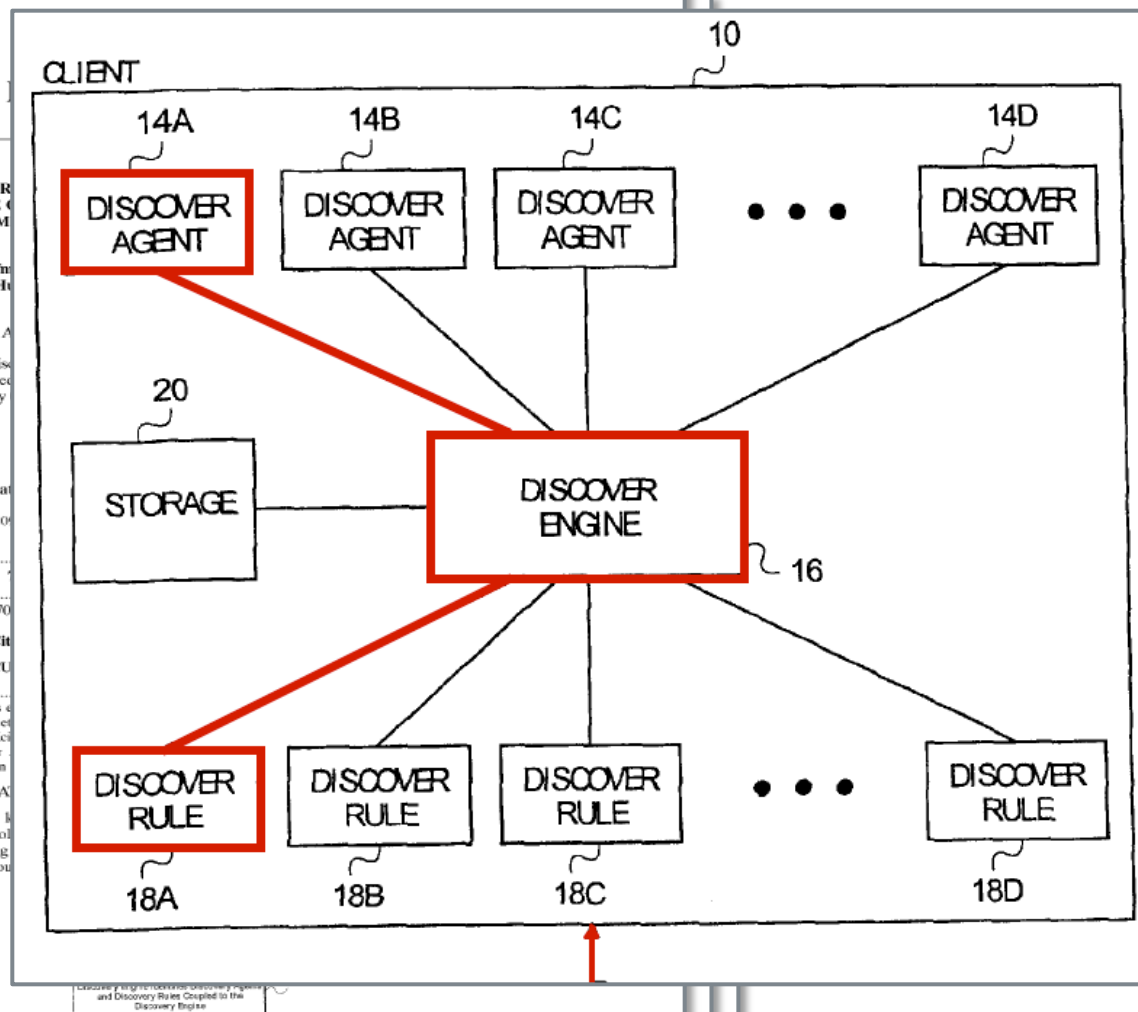
(56) **References Cited**

U.S. PATENT DOCUMENTS

5,185,860 A * 2/1993 Wu
5,555,346 A * 9/1996 Gross et al.
5,586,025 A * 12/1996 Tsuji et al.
5,727,174 A * 3/1998 Aparicio
5,877,759 A * 3/1999 Bauer
5,944,783 A * 8/1999 Nietzen

OTHER PUBLICATIONS

Elofson "intelligent agents extend the feasibility", IBM system Journal vol. 35, no. 2, 1990.
Hilbert et al "Agents for collecting information over the internet", ACM Autonomous



'581 Patent at Fig. 1

The '434 Patent

Alice Step 1: Abstract Idea

Is the Patent Directed to an Abstract Idea?

Abstract

Not Abstract

- 
- Methods of Conducting Business
 - Managing Financial and Legal Relationships
 - Mathematical Equations
 - Ideas Upon Themselves

- Specific Machines
- Improvements to Existing Technological Processes
- Solutions Necessarily Rooted in Computer Technology to Overcome a Technological Problem

The Patent is Directed to Computer Technology



US006510434B1

(12) **United States Patent**
Anderson et al.

(10) Patent No.: **US 6,510,434 B1**
(45) Date of Patent: **Jan. 21, 2003**

(54) **SYSTEM AND METHOD FOR RETRIEVING
INFORMATION FROM A DATABASE USING
AN INDEX OF XML TAGS AND METAFILES**

(75) Inventors: Dewey
Anders

(73) Assignee: BellSouth
Corporation

(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. § 154(d).

OTHER PUBLICATIONS

(21) Appl. No.: 09/474,141

(22) Filed: Dec. 29, 1999

(51) Int. Cl.⁷ G06F 17/00

(52) U.S. Cl. 707/103; 707/104

(58) Field of Search 707/103; 707/104

(56) Reference

U.S. PATENT

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4,872,122	A	10/99
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5,005,143	A	4/99
5,170,480	A	12/99
5,175,814	A	12/99
5,222,238	A	6/99
5,337,347	A	8/99
5,379,391	A	1/99
5,404,508	A	4/99
5,455,946	A	10/99
5,465,368	A	11/99
5,526,356	A	6/99
5,561,795	A	10/99
5,615,364	A	3/99
5,630,125	A	5/99

SUMMARY OF THE INVENTION

The present invention meets the needs described above by providing a method for locating information stored in a database using an index that includes tags and metafiles to locate the desired information. In general, an index is essentially a guide that is used to locate information stored in a database. Preferably, the index includes tags that correspond to categories and domains. A category includes a group of terms. A term may appear in more than one



'434 Patent at (54), Col. 2:34-43

The Patent Solves a Computer Problem



US006510434B1

BACKGROUND OF THE INVENTION

There is an ever-increasing amount of recorded and searchable information. To efficiently search for specific

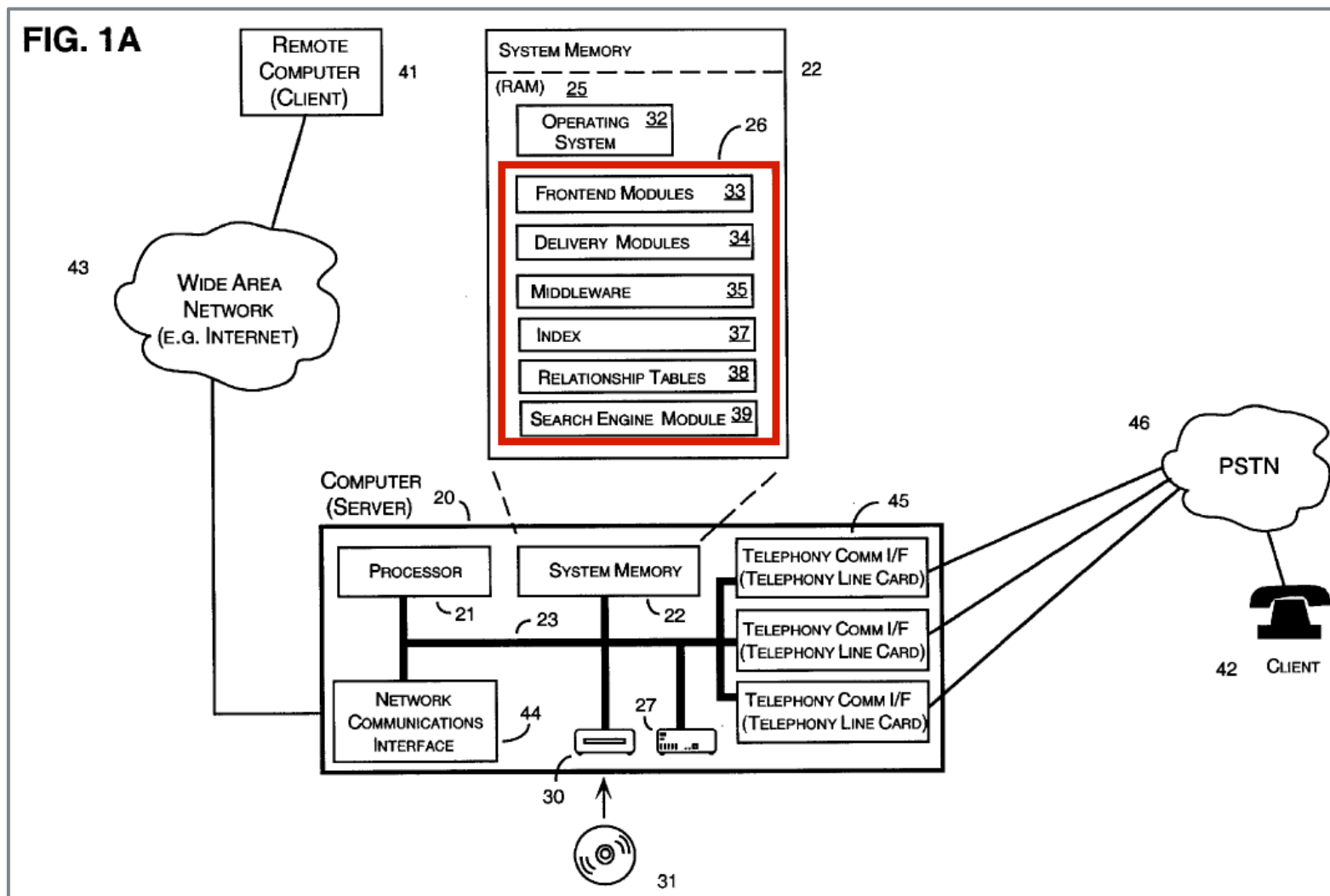
Accordingly, there is a need in the art for an improved method of searching that uses a universal search vocabulary.

The method should eliminate ambiguity in the search request, focus the search on the most relevant information, perform the search in the most efficient manner and support searching multiple databases. The method should also support a hierarchy that can be used to query a user for additional search criteria in an efficient and intelligent manner.



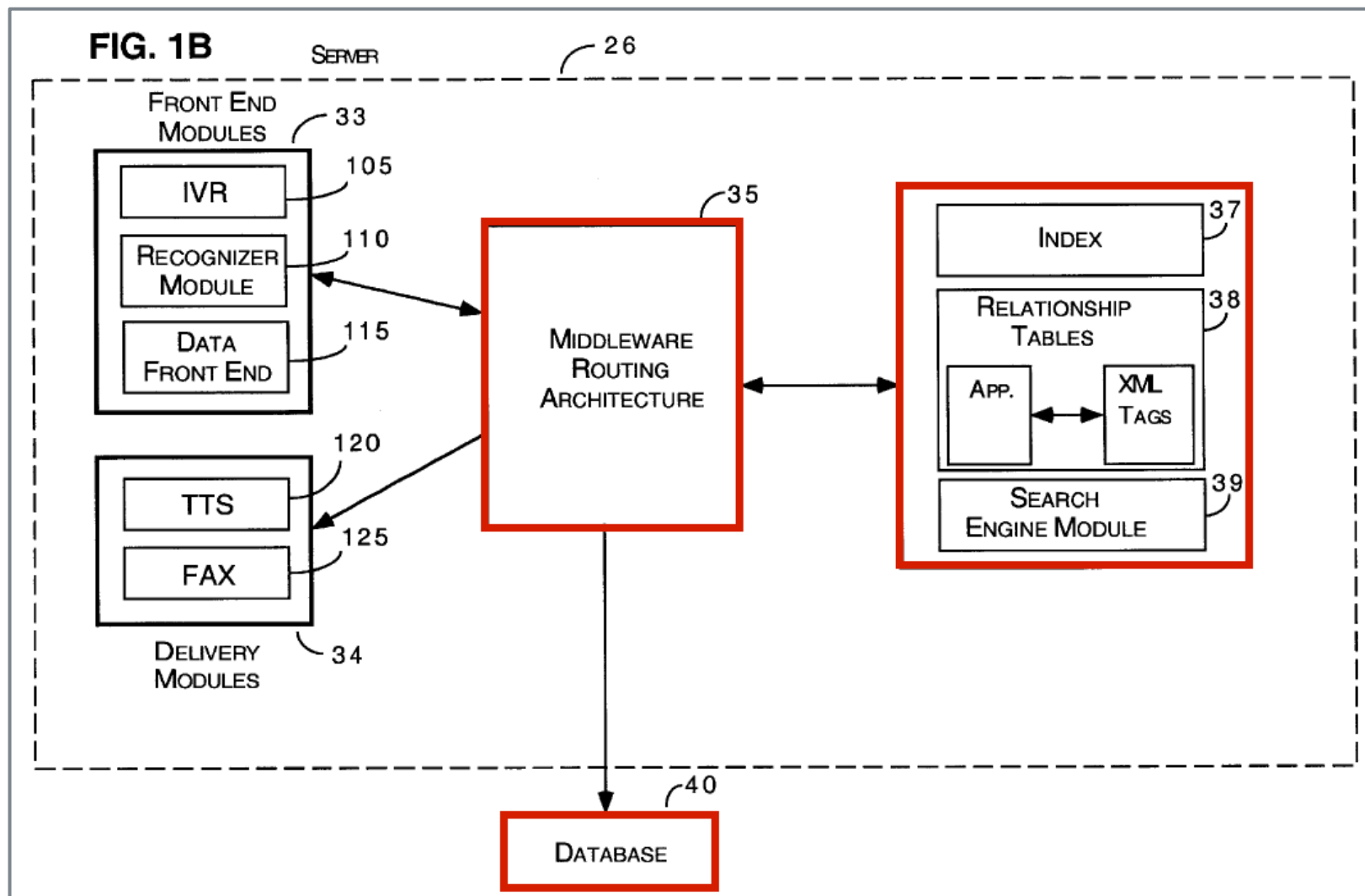
'434 Patent at Col. 1:30-31, 2:25-33

The Patent is Rooted in Computer Technology



'434 Patent at Fig. 1A

The Patent is Rooted in Computer Technology



'434 Patent at Fig. 1B

The Patent is Rooted in Computer Technology

FIG. 4A illustrates an exemplary database record 400. The database record 400 includes an Alpha Component 402 and an XML Index Component 404. The Alpha Component 402 contains identifying information for the record and the XML Index Component 404 includes XML tags that are associated with the record.

(12) **United States Patent**
Anderson et al.

(54) **SYSTEM AND METHOD FOR**
INFORMATION FROM A DATA
AN INDEX OF XML TAGS AND

(75) Inventors: Dewey C. Anderson; D
Anderson, both of Atl

(73) Assignee: BellSouth Intellectual
Corporation, Wilmington

(*) Notice: Subject to any disclaimer, the term of
patent is extended or adjusted under
U.S.C. 154(b) by 0 days.

(21) Appl. No.: 09/474,644

(22) Filed: Dec. 29, 1999

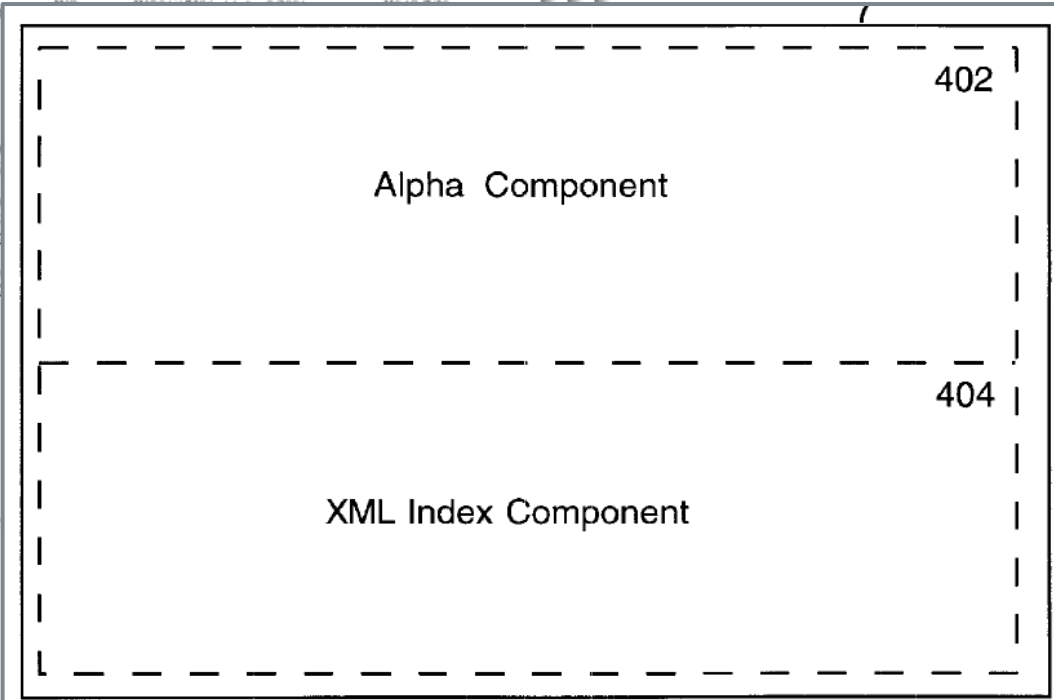
(51) Int. Cl.⁷ G06F 17/30; G06F 15/
G06F 15/

(52) U.S. Cl. 707/100; 707/101; 707/1
707/103; 707/104; 707/3; 707/10; 707/5
709/2

(58) Field of Search 707/100, 1
707/102, 103, 104, 3, 10, 513; 709/2

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5,170,480 A	12/1992	Mohan et al.	
5,175,814 A	12/1992	Anick et al.	
5,222,238 A	6/1993	Zobir et al.	
5,337,347 A	8/1994	Halstead-Nussloch et al.	
5,379,391 A	1/1995	Belsan et al.	711/
5,404,508 A	4/1995	Konrad et al.	
5,455,946 A	10/1995	Mohan et al.	
5,465,368 A	11/1995	Davidson et al.	
5,526,356 A	6/1996	Kim et al.	
5,561,795 A	10/1996	Sarkar	
5,615,364 A	3/1997	Marks	
5,630,125 A	5/1997	Zellweger	



'434 Patent at Fig. 4A, Col. 10:9-14

The Patent is Rooted in Computer Technology



US006510434B1

(12) **United States Patent**
Anderson et al.

(54) **SYSTEM AND METHOD FOR
EXTRACTING INFORMATION FROM A
DOCUMENT USING AN INDEX OF XML TAGS**

(75) Inventors: Dewey C. Anderson
Anderson, both of

(73) Assignee: BellSouth Intellectual
Property Corporation, Wil

(*) Notice: Subject to any disclaimer,
this patent is extended
under U.S.C. 154(b) by 0

(21) Appl. No.: 09/474,644

(22) Filed: Dec. 29, 1999

(51) Int. Cl.⁷ G06

(52) U.S. Cl. 707/1
707/103; 707/104; 70

(58) Field of Search
707/102, 103, 10

(56) References Cited
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5,005,143 A 4/1991 Altschul
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5,175,814 A 12/1992 Anick et al.
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5,337,347 A 8/1994 Halstead
5,379,391 A 1/1995 Belsan et al.
5,404,508 A 4/1995 Konrad
5,455,946 A 10/1995 Mohan et al.
5,465,368 A 11/1995 Davidson
5,526,356 A 6/1996 Kim et al.
5,561,795 A 10/1996 Sarkar
5,615,364 A 3/1997 Marks
5,630,125 A 5/1997 Zellweg

Terrace Restaurant
125 Poplar Street
Atlanta, GA 30303

408

<Restaurant_Tag> (Domain) 412 410
<Catering_Tag> (Domain) 414
<Downtown_Geography_Tag> (Category) 416
<American_Cuisine_Tag> (Category) 418
<Valet_Parking_Amenity_Tag> (Category) 420
<AMERICAN_EXPRESS_Payment_Tag> (Category) 422
<VISA_Payment_Tag> (Category) 424
<MASTERCARD_Payment_Tag> (Category) 426



'434 Patent at Fig. 4B

The Patent is Rooted in Computer Technology



US006510434B1

(12) **United States Patent**
Anderson et al.

(10) **Patent No.:** US 6,510,434 B1
(45) **Date of Patent:** Jan. 21, 2003

(54) **SYSTEM AND METHOD FOR RETRIEVING
INFORMATION FROM A DATABASE USING**

5,634,051 A 5/1997 Thompson
5,636,350 A 6/1997 Eick et al.

345,340

1. A method for creating a database and an index to search the database, comprising the steps of:
 creating the index by defining a plurality of XML tags including domain tags and category tags;
 creating a first metafile that corresponds to a first domain tag; and
 creating the database by providing a plurality of records, each record having an XML index component.

5,404,508 A 4/1995 Kishino et al.
5,455,946 A 10/1995 Mohan et al.
5,465,368 A 11/1995 Davidson et al.
5,526,356 A 6/1996 Kim et al.
5,561,795 A 10/1996 Sarkar
5,615,364 A 3/1997 Marks
5,630,125 A 5/1997 Zellweger

used to identify additional tags that are relevant to the search. The identified tags are combined to create a unique key. The key is used to search the database to locate records that include the tags in their index component.

28 Claims, 12 Drawing Sheets



'434 Patent at Claim 1

The Patent is Rooted in Computer Technology

(12) **United States Patent**
Anderson et al.

(54) **SYSTEM AND METHOD FOR
INFORMATION FROM A DATA
AN INDEX OF XML TAGS AND**

(75) Inventors: Dewey C. Anderson; I
Anderson, both of Atl

(73) Assignee: BellSouth Intellectual
Corporation, Wilming

(*) Notice: Subject to any disclaimer,
patent is extended or
U.S.C. 154(b) by 0 day

(21) Appl. No.: 09/474,644

(22) Filed: Dec. 29, 1999

(51) Int. Cl.⁷ G06F 15/00

(52) U.S. Cl. 707/100;
707/103; 707/104; 707/300

(58) Field of Search
707/102, 103, 104, 300

(56) **References Cited**
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4,130,885	A	12/1978	Dennis
4,872,122	A	10/1989	Altschuler et al.
4,931,941	A	6/1990	Krishnan
5,005,143	A	4/1991	Altschuler et al.
5,170,480	A	12/1992	Mohan et al.
5,175,814	A	12/1992	Anick et al.
5,222,238	A	6/1993	Zobir et al.
5,337,347	A	8/1994	Halstead-Nun
5,379,391	A	1/1995	Belsan et al.
5,404,508	A	4/1995	Konrad et al.
5,455,946	A	10/1995	Mohan et al.
5,465,368	A	11/1995	Davidson et al.
5,526,356	A	6/1996	Kim et al.
5,561,795	A	10/1996	Sarkar
5,615,364	A	3/1997	Marks
5,630,125	A	5/1997	Zellweger

19. A method for searching a database of information, comprising the steps of:

receiving a request for information from a client, the request having a first term;

identifying a first XML tag that is associated with the first term;

determining whether a first metafile corresponds to the first XML tag;

if the first metafile corresponds to the first XML tag, then transmitting the first XML tag, the first metafile and query code to the client;

once the client conducts a query by executing the query code using the first XML tag and the first metafile, then receiving query results including a first set of XML tags from the client;

combining the first set of XML tags into a key;

using the key to search the database to locate records including the first set of XML tags; and

delivering the records including the first set of XML tags to the client.

'434 Patent at Claim 19

The Patent is Rooted in Computer Technology



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(*) Notice:

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(22) Filed:

(51) Int. Cl

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(58) Field o

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4,128,882
4,130,885
4,872,122
4,931,941
5,005,143
5,170,480
5,175,814
5,222,238
5,337,347
5,379,391
5,404,508
5,455,946
5,465,368
5,526,356
5,561,795
5,615,364
5,630,125

22. A method for identifying a record from a database of records that satisfies a request for information, comprising the steps of:

receiving the request for information;

sending the request to a server;

receiving a first XML tag and a first metafile that are associated with the request and query code from the server;

executing the query code to determine a first set of XML tags that are associated with the request;

sending the first set of XML tags to the server;

receiving the record from the server; and

delivering the record.



'434 Patent at Claim 22

Alice Step 2

Even if Directed to an Abstract Idea, Does the Claim Contain Sufficient Limitations?

Sufficient Limitations on Abstract Idea

- A specific application of an abstract idea is patent-eligible
- Generic computing limitations are usually insufficient
- Overarching concern is preemption of every application of abstract idea

The Claims Cover a Specific Database Application



US006510434B1

(12) **United States Patent**
Anderson et al.

(10) **Patent No.:** US 6,510,434 B1
(45) **Date of Patent:** Jan. 21, 2003

(54) **SYSTEM AND METHOD FOR RETRIEVING
INFORMATION FROM A DATABASE USING**

5,634,051 A
5,636,350 A

5/1997 Thompson
6/1997 Eick et al.

345,040

1. A method for creating a database and an index to search the database, comprising the steps of:
 creating the index by defining a plurality of XML tags including domain tags and category tags;
 creating a first metafile that corresponds to a first domain tag; and
 creating the database by providing a plurality of records, each record having an XML index component.

5,404,508 A 4/1995 Kimura et al.
5,455,946 A 10/1995 Mohan et al.
5,465,368 A 11/1995 Davidson et al.
5,526,356 A 6/1996 Kim et al.
5,561,795 A 10/1996 Sarkar
5,615,364 A 3/1997 Marks
5,630,125 A 5/1997 Zellweger

used to identify additional tags that are relevant to the search. The identified tags are combined to create a unique key. The key is used to search the database to locate records that include the tags in their index component.

28 Claims, 12 Drawing Sheets



'434 Patent at Claim 1

The Claims Cover a Specific Database Application

3. The method of claim 1, wherein the step of creating a first metafile, comprises the steps of:

selecting a first set of domain tags from the defined XML tags that are related to the first domain tag; and

selecting a first set of category tags from the defined XML tags that are related to the first domain tag.

5. The method of claim 3, further comprising the step of: creating a hierarchy between the tags in the metafile.

6. The method of claim 1, wherein the step of creating a first metafile comprises the steps of:

selecting a first set of XML tags from the defined XML tags that are related to the first domain tag; and

creating a hierarchy between the tags in the first set of XML tags.

'434 Patent at Claims 3, 5, and 6

The '002 Patent

Alice Step 1: Abstract Idea

Is the Patent Directed to an Abstract Idea?

Abstract

Not Abstract

- Methods of Conducting Business
- Managing Financial and Legal Relationships
- Mathematical Equations
- Ideas Upon Themselves

- Specific Machines
- Improvements to Existing Technological Processes
- Solutions Necessarily Rooted in Computer Technology to Overcome a Technological Problem

The Patent is Directed to Computer Technology



US006546002B1

(12) **United
Kim**

(54) **SYSTEM AND METHOD FOR IMPLEMENTING AN INTELLIGENT AND MOBILE MENU-INTERFACE AGENT**

(54) **SYSTEM AND
IMPLEMEN
MOBILE M**

(76) Inventor: Je
17

(*) Notice: Su
pa
U.

(21) Appl. No.: 09

(22) Filed: Ju

(51) Int. Cl.⁷

(52) U.S. Cl.

(58) Field of Sear

103,

(56)

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5,093,718 A
5,155,806 A
5,181,107 A
5,347,632 A
5,433,614 A
5,524,195 A
5,594,490 A
5,737,560 A
5,740,549 A

FIELD OF THE INVENTION

The present invention relates generally to the field of computer networks. More particularly, the present invention is directed to an information management and storage system and method. The present invention is further directed to a mobile interface agent that can be used to dynamically access resources stored either locally in the computer device or across a network including programs, applications, bookmarked URLs, user profiles, IP addresses, telephone numbers, television channels, radio stations, and the like that are specific to a user via any computer device. Moreover, the

From user identification

'002 Patent at (54), Col. 1:5-16

The Patent Solves a Computer Problem



US006546002B1

(12) **United States Patent**
Kim

(10) Patent No.: **US 6,546,002 B1**
(45) Date of Patent: **Apr. 8, 2003**

(54) **SYSTEM AND
IMPLEMEN
MOBILE M**

BACKGROUND OF THE INVENTION

(76) Inventor: **Joseph A. Kim, 1717 Montecito Ave.,
17, Mountain View, CA (US) 94043**

OTHER PUBLICATIONS

S.S. Chakraborty, Mobile Multimedia: In Context to ATM
Transport and GSM/GPRS Mobile Access Networks, May

(*) Notice: Subject to any disclaimer, the term of this

(21) Appl. No.: 09

(22) Filed: Ju

(51) Int. Cl. 7

(52) U.S. Cl.

(58) Field of Sear

103,

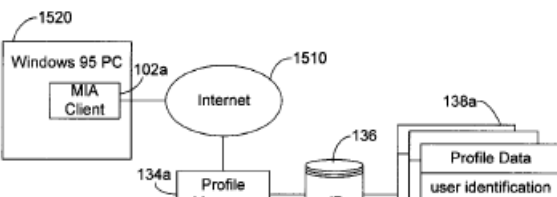
(56)

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5,181,107 A
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5,433,614 A
5,524,195 A
5,594,490 A
5,737,560 A
5,740,549 A

4/1998 Reilly et al. 705/14

49 Claims, 15 Drawing Sheets



'002 Patent at (54), Col. 3:57-64

The Patent Solves a Computer Problem

(12) United States Patent Kim

(54) SYSTEM AND METHOD FOR
IMPLEMENTING AN INTELLIGENT
MOBILE MENU-INTERFACE AGENT

(76) Inventor: Joseph J. Kim, 1375 Montecito
17, Mountain View, CA (US) 9

(*) Notice: Subject to any disclaimer, the term
patent is extended or adjusted
U.S.C. 154(b) by 0 days.

(21) Appl. No.: 09/346,788

(22) Filed: Jul. 7, 1999

(51) Int. CL⁷ H0

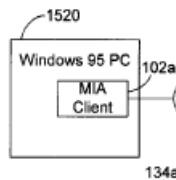
(52) U.S. CL H0

(58) Field of Search 370/
370/401, 402, 338; 345/327,
719; 709/232, 207, 315-317;
103, 104; 725/110-113; 455/552-
445, 414, 423,

(56) References Cited

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5,181,107 A	1/1993	Rhoades
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5,433,614 A	7/1995	Beye
5,524,195 A	6/1996	Clanton, III et al.
5,594,490 A	1/1997	Dawson et al.
5,737,560 A	4/1998	Yohanan
5,740,549 A	4/1998	Reilly et al.



Windows NT Server



Programs



Documents



Settings



Find



Help



Run



Shut Down



Start

'002 Patent at Fig. 2

The Patent is Rooted in Computer Technology

(12) United States Patent Kim



US006546002B1

(10) Patent No.: US 6,546,002 B1
(45) Date of Patent: Apr. 8, 2003

(54) SYSTEM AND METHOD FOR IMPLEMENTING AN INTELLIGENT AND MOBILE MENU-INTERFACE AGENT

(76) Inventor: Joseph J. Kim, 1375 Montecito Ave
17, Mountain View, CA (US) 94043

(*) Notice: Subject to any disclaimer, the term of
patent is extended or adjusted under
U.S.C. 154(b) by 0 days.

(21) Appl. No.: 09/346,788

(22) Filed: Jul. 7, 1999

(51) Int. Cl.⁷ H04L 12

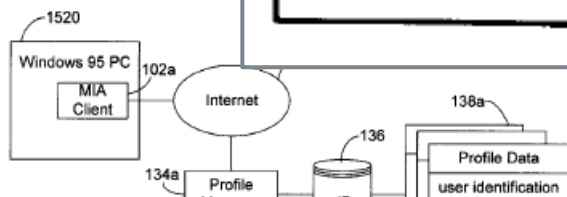
(52) U.S. Cl. 370/

(58) Field of Search 370/350-
370/401, 402, 338; 345/327, 721,
719; 709/232, 207, 315-317; 707/5
103, 104; 725/110-113; 455/552-556,
445, 414, 423, 401-

(56) References Cited

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5,181,107 A	1/1993	Rhoades	35
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5,524,195 A	6/1996	Clanton, III et al.	395
5,594,490 A	1/1997	Dawson et al.	3
5,737,560 A	4/1998	Yohanan	395
5,740,549 A	4/1998	Reilly et al.	70



MIA

U**ser**

ID:

Pass:

OK

MIA-jokim

User File Network

Send

Find

Recommend

Sing

Poetry

URLs ▶

Apps ▶

Images ▶

Docs ▶

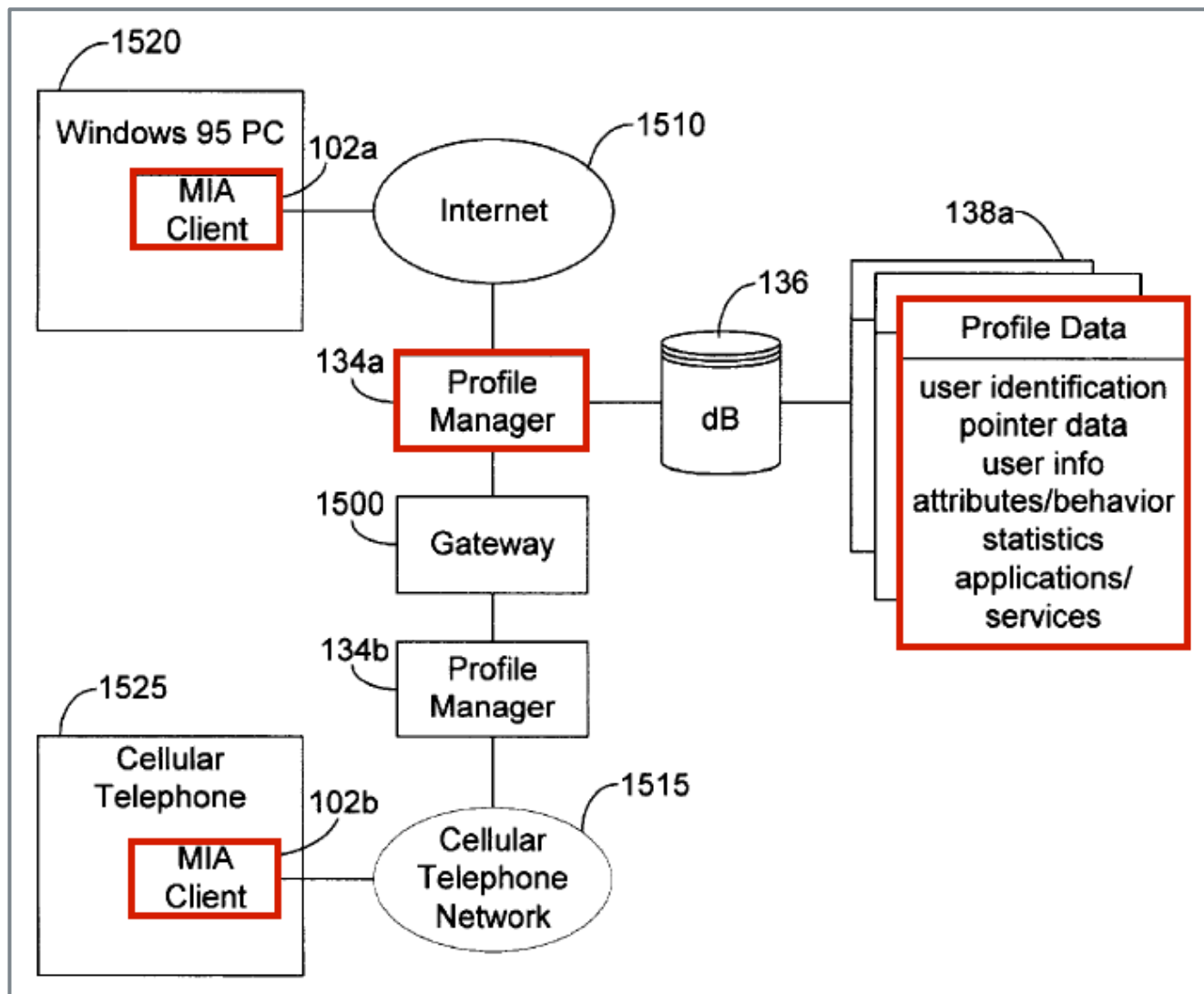
Mail ▶

Option ▶

Exit

'002 Patent at Figs. 1, 2

The Patent is Rooted in Computer Technology



'002 Patent at Fig. 15

The Patent is Rooted in Computer Technology

(12) United States Patent
Kim

(54) SYSTEM AND METHOD FOR
IMPLEMENTING AN INTEL
MOBILE MENU-INTERFACE

(76) Inventor: Joseph J. Kim, 1375
17, Mountain View, CA

(*) Notice: Subject to any disclaimer,
this patent is extended to
U.S.C. 154(b) by 0 day

(21) Appl. No.: 09/346,788

(22) Filed: Jul. 7, 1999

(51) Int. Cl.⁷

(52) U.S. Cl.

(58) Field of Search

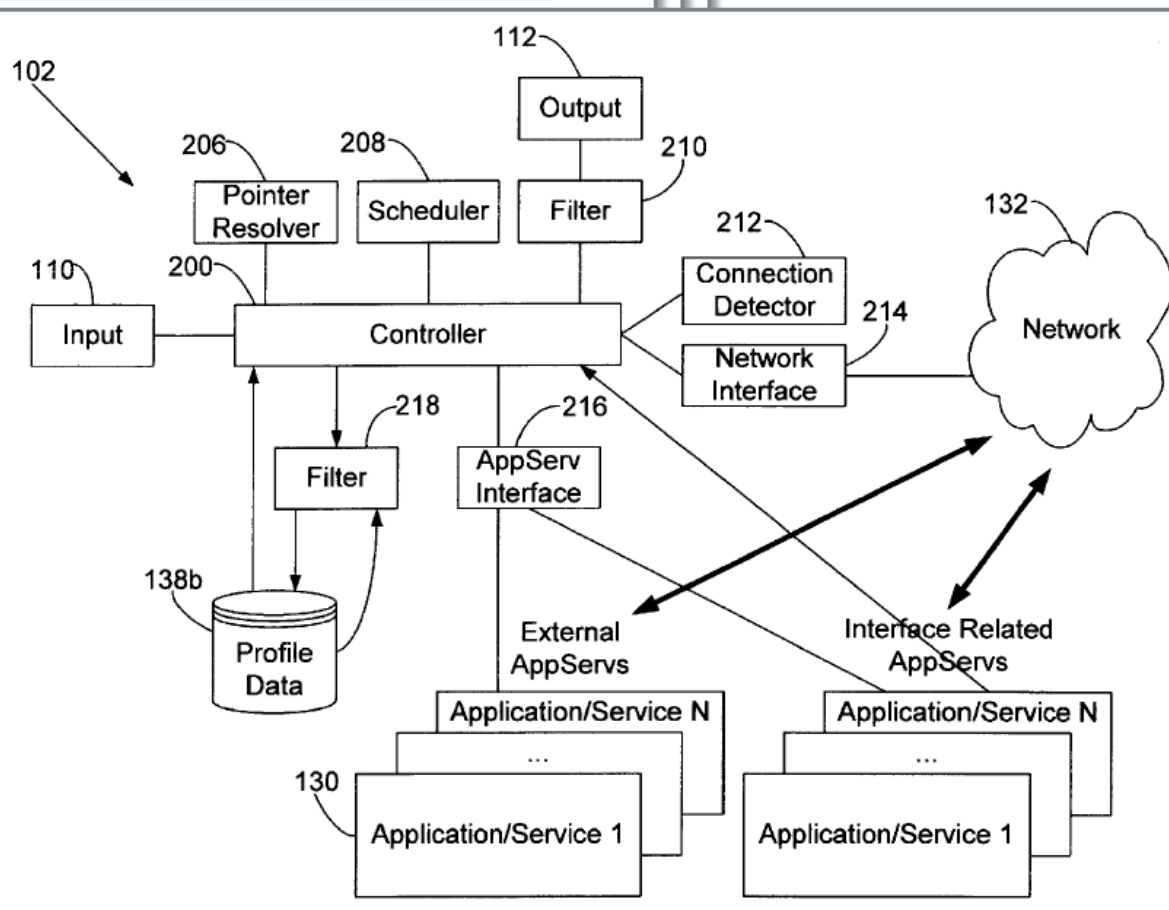
370/401, 402, 338;
719; 709/232, 207,
103, 104; 725/110-113;
445,

(56) References Cited

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5,181,107 A	1/1993	Rhoades ..
5,347,632 A	9/1994	Filepp et al
5,433,614 A	7/1995	Beye
5,524,195 A	6/1996	Clanton, III
5,594,490 A	1/1997	Dawson et al
5,737,560 A	4/1998	Yohanan ..
5,740,549 A	4/1998	Reilly et al

FIG. 4 illustrates a detailed block diagram of a mobile interface agent in accordance with the present invention;



'002 Patent at Fig. 4

The Patent is Rooted in Computer Technology

FIG. 7 illustrates a state diagram for the mobile interface agent in accordance with the present invention;

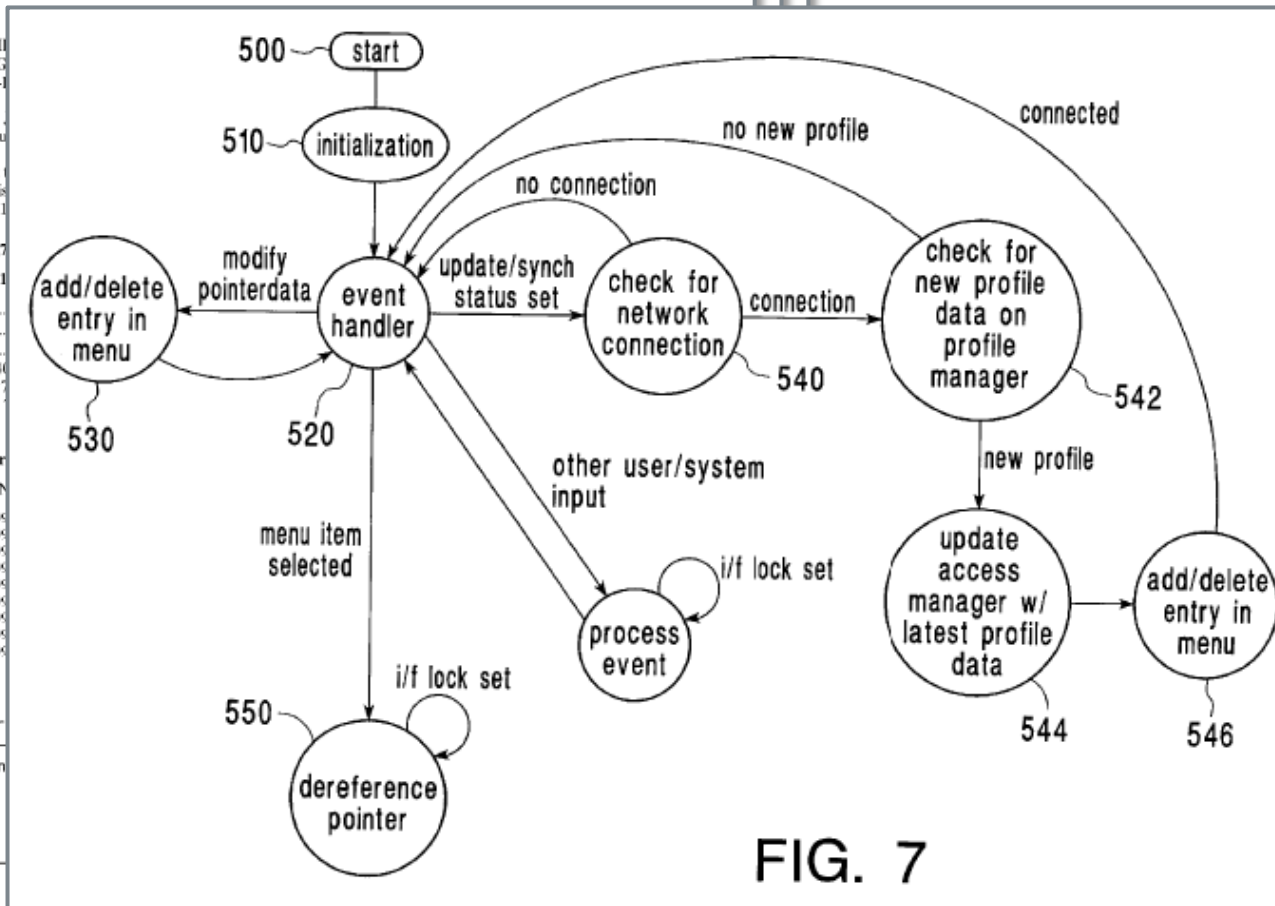


FIG. 7

'002 Patent at Fig. 7

The Patent is Rooted in Computer Technology



US006546002B1

(12) **United States Patent**
Kim

(10) Patent No.: US 6,546,002 B1
(45) Date of Patent: Apr. 8, 2003

(54) **1. A method for retrieving user specific resources and**
(76) **information stored either on a local device or a network**
(*) **server, the method comprising the steps of:**

(21) **retrieving a mobile interface** from the network server to
(22) **the local device;**
(51)
(52)
(58)

(56) **displaying the mobile interface** on the local device, the
mobile interface including a plurality of pointers cor-
responding to the user specific resources and informa-
tion; and

retrieving the user specific resources and information
using the plurality of pointers displayed on the mobile
interface.



'002 Patent at Claim 1

The Patent is Rooted in Computer Technology



US006546002B1

(12) **United States Patent**
Kim

(10) Patent No.: **US 6,546,002 B1**

(54) **SYSTEM,
IMPLEMI
MOBILE**

(76) Inventor:

(*) Notice:

(21) Appl. No.:

(22) Filed:

(51) **Int. Cl.** 7 ...

(52) **U.S. Cl.** ...

(58) Field of Se

(56)

U.S.

5,093,718 A
5,155,806 A
5,181,107 A
5,347,632 A
5,433,614 A
5,524,195 A
5,594,490 A
5,737,560 A
5,740,549 A

40. A system for storing and accessing user specific resources and information, the system comprising:

a network for accessing the user specific resources and information stored in a network server; and

a local device communicating with the network and having a local memory and a mobile interface, wherein the local memory also includes user specific resources and information, and the mobile interface includes pointers corresponding to the user specific resources and information that are stored either on the local device or the network server, wherein the pointers provide links to access the corresponding user specific resources and information.



'002 Patent at Claim 40

Alice Step 2

Even if Directed to an Abstract Idea, Does the Claim Contain Sufficient Limitations?

Sufficient Limitations on Abstract Idea

- A specific application of an abstract idea is patent-eligible
- Generic computing limitations are usually insufficient
- Overarching concern is preemption of every application of abstract idea

The Patent Covers a Specific Mobile Implementation



US006546002B1

(12) United States Patent

(10) Patent No.: US 6,546,002 B1

(22) Date of Patent: Aug. 9, 2007

1. A method for retrieving user specific resources and information stored either on a local device or a network server, the method comprising the steps of:

retrieving a mobile interface from the network server to the local device;

displaying the mobile interface on the local device, the mobile interface including a plurality of pointers corresponding to the user specific resources and information; and

retrieving the user specific resources and information using the plurality of pointers displayed on the mobile interface.



'002 Patent at Claim 1

The Patent Covers a Specific Mobile Implementation



US006546002B1

(12) **United States Patent**
Kim

(10) Patent No.: **US 6,546,002 B1**

(54) **SYSTEM,
IMPLEMI
MOBILE**

(76) Inventor:

(*) Notice:

(21) Appl. No.:

(22) Filed:

(51) **Int. CL⁷** ...

(52) **U.S. Cl.** ...

(58) Field of Se

(56)

U.S.

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5,737,560 A
5,740,549 A

40. A system for storing and accessing user specific resources and information, the system comprising:

a network for accessing the user specific resources and information stored in a network server; and

a local device communicating with the network and having a local memory and a mobile interface, wherein the local memory also includes user specific resources and information, and the mobile interface includes pointers corresponding to the user specific resources and information that are stored either on the local device or the network server, wherein the pointers provide links to access the corresponding user specific resources and information.



'002 Patent at Claim 40

The Patent Covers a Specific Mobile Implementation



US006546002B1

(12) United States Patent

(10) Patent No.: US 6,546,002 B1

(22) Date of Patent: Aug. 9, 2003

43. A system according to claim 40, wherein the plurality of pointers access the user specific resources and information stored on the network server via one of a LAN, a MAN, and a WAN.

(22) Filed: Jul. 7, 1999

(74) Attorney, Agent, or Firm—Pillsbury Winthrop LLP

(51) Int. Cl.⁷ H04L 12/28

(57) ABSTRACT

44. A system according to claim 40, wherein the plurality of pointers access the user specific resources and information stored on the network server via a cellular network.

5,347,632 A 9/1994 Filepp et al. 395/200
 5,433,614 A 7/1995 Beye 434/307
 5,524,195 A 6/1996 Clanton, III et al. 395/155

computer. Moreover, the present invention relates to a per user based licensing model that allows the user to remotely

48. A system according to claim 40, wherein the mobile interface is permanently stored in the network server.



'002 Patent at Claims 43, 44, and 48



END